

Fundamentals of LAND DESIGN

CIRCULAR SERIES

INDEX-
NUMBER **B3.0**



ISSUED BY THE
SMALL HOMES COUNCIL – BUILDING RESEARCH COUNCIL

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LAND DESIGN
SMALL HOMES COUNCIL **B3.0**

YOUR HOME DESERVES A GOOD SETTING

The ground around your home deserves the same intelligent planning which your house receives, for land is valuable. By landscaping your lot, you can extend your living area to the outdoors. This inclusion of the outdoor area as part of the home demands that the house and the site be developed together in order to satisfy the tastes and habits of the family.



Planned use and development of the small lot is important. Without planning, utility of land is sacrificed; maintenance costs mount; plants grow rampant. The effect is haphazard.

The mere planting of trees and bushes is not landscaping. Landscaping involves:

1. **Design** — the creation of a plan which makes the best use of the land in the most attractive way. (Shun "ready-made" schemes.)
2. **Construction** — the carrying out of the design by shaping the land to make the most of the site's natural advantages and by building necessary structures, such as walks, walls, driveways. (Planning and design must precede the actual construction.)
3. **Planting** — the selection and growing of plants to fit the design.

The ultimate fulfillment of the design is secured by *maintenance* — the proper care of things that have been constructed or planted.

PLAN THE HOUSE AND THE GROUNDS AS A UNIT

Landscape planning should begin when the original scheme for your home is being considered — not after the house is built. (If you engage a landscape architect, have him collaborate with your architect at the very beginning.)

The smaller the house, grounds and budget — the greater the need for correct and complete planning, because every square foot of space and every dollar must be made to produce maximum results.

Plan for the best use of the site and minimum upkeep as well as pleasant appearance.

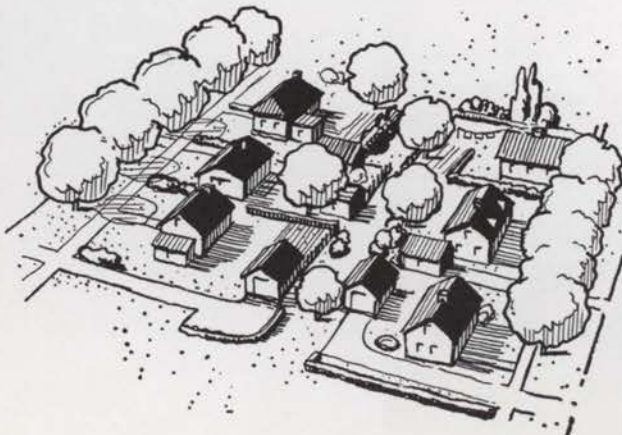
Plan for complete development. You do not have to develop all of your lot at once. However, there should be an all-over plan so that when any work is done on the lot, it will be part of the general scheme. Carrying out the landscape plan is generally a matter of years, for plantings need time to grow. Be patient.

Do not allow a spade of earth to be turned until a grading schedule has been prepared from a well-studied plan for house and lot. To do otherwise is to sacrifice such things as trees and soil.

JOIN YOUR NEIGHBORS IN DEVELOPING THE BLOCK

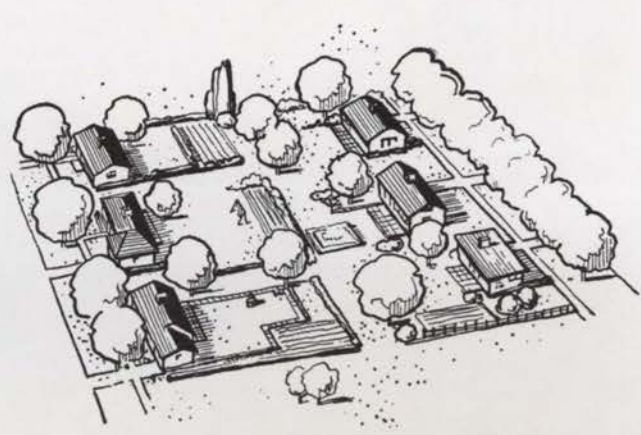
Since your house will probably look into the yards of your next-door neighbors, do what you can to improve the whole neighborhood area. See if you can obtain an open effect in the landscape of the block. Don't cage yourself in by overemphasizing property lines. If you don't need fences, don't build them. Try to see your own lot from the standpoint of the block development.

Where privacy is desired, choose a spot to invite sun or shade, breezes or wind protection as you prefer; erect a wall or planting screen. Be sure the protected spot can be reached easily from the house.



INDIVIDUAL LOT PLANNING

Unnecessary emphasis of property lines produces cluttered effect. Detached garages break yards into small areas.



BLOCK PLANNING

An open effect is attained by reducing street area and by using low hedges with occasional screening. Note attached garages.

LANDSCAPE DESIGN

Your landscape design will be influenced by certain factors:

1. Your lot and its characteristics.
2. Neighborhood sights and noises.
3. Climate; sun and shade.
4. Your family activities; your house plan.
5. The amount of time, effort and money you wish to spend on maintenance.

In laying out the design, preserve all the best natural resources on the site such as:

SITE FACTORS Trees (if you are lucky); original wilds (if not previously destroyed); brooks, ponds and rocks (in exceptional cases); good soil (usually); and turf (frequently). The development of your lot will be influenced by all these things.

Give full value to views. Keep good views open. Screen out what you don't like. Often a bush or

VIEWS two will provide all the screening that is necessary. The principal rooms of the house should look out on the lawn or the garden.

Climate means sunshine, rain, sleet, snow, wind, heat and cold. All these affect the way you build your house and use your land; also

CLIMATE what you plant. In planning your grounds, don't fight the climate; capitalize on its advantages. If you live in a warm climate, enlarge your outdoor living area. If your home is in the cold north, plant so that you can enjoy the winter scene from the inside. (Evergreens and hedges are picturesque when covered with snow.)

FAMILY ACTIVITIES

The use which you will make of your land will determine its layout. Set up a program to cover what you think will be the activities of your family. Make allowances for future changes. Consider:

- ☐ Outdoor living ☐ Playing ☐ Gardening ☐ Household servicing

The family routine follows a general pattern, but varies with each family's way of living. The place is yours and should express your needs.



A complicated design requires constant maintenance.

MAINTENANCE

Decide on maintenance standards. If you are the type who enjoys puttering around the yard, your design may be more elaborate than if you are not yard-minded. Remember, however:

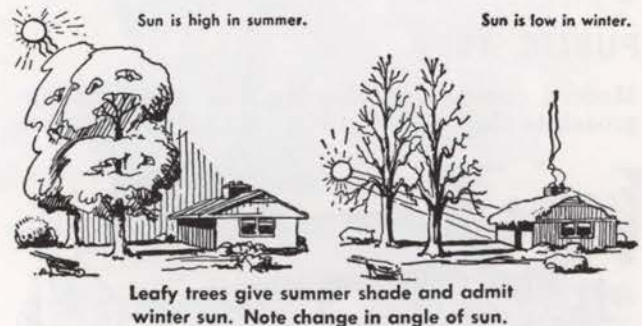
The fewer things there are on the site, the less there is to maintain.

Things that take care of themselves cost less in the end . . . i.e., well-constructed furnishings (steps, fences, outdoor furniture, etc.) of permanent materials; plants native to the region. Cheap construction results in shabbiness.



A simple design permits minimum maintenance.

Since people respond differently to sun and shade, it is important to study the amount and location of each on the lot. Sun and shade patterns change with the seasons and vary each minute. The sun is higher and the shadows are shorter in the summer than in the winter.



Leafy trees give summer shade and admit winter sun. Note change in angle of sun.

The principal rooms of a house should benefit from winter sun and summer breeze. This means that the house must be correctly oriented. A house plan suited to one lot will not be correct for a lot facing a different direction.

Sunlight and shade can be controlled by the location of buildings and trees, and the use of devices such as awnings.

Figure out possible shade from trees and houses on your neighbors' lots as well as your own.

Spot future shade from tree plantings with great care in order to keep sunny areas for gardens; summer shade for house and terrace. Deciduous trees (those which shed their leaves) shade the house in summer and admit the sun in winter. Place trees off the corners rather than the sides of the house. Remember that an overplanting of trees shuts out sun and air.

DIVIDE THE LOT ACCORDING TO USE . . .

The division of your lot into areas — street, garden, service and private — and the development of these areas are determined by the same factors as the size and number of rooms in a house — by family needs. These needs influence the size, shape and location of the areas. Areas must be located in relation to:

1. The street and your neighbors' yards. (See Page 2.)
2. The rooms of the house. Certain exterior areas are related to interior areas by their use, such as the service walk and the kitchen. Plan these together.

PUBLIC AREA

Modern community planning has made the approach to the house a public area. By eliminating



alleys, it has encouraged the use of the street for all access to the house.

Regulations usually specify how far back on the lot the house must be placed. Ordinarily there is no reason for making this area any larger unless it is to save trees. The old "front yard" with its display lawn has yielded to larger private areas designed for family enjoyment.

APPROACH TO HOUSE: By planning the house and the lot together, no land will be wasted on indirect approach walks or long, costly driveway.

LAWN: The ideal lawn for any area — public or private — is smooth, simple in shape, unobstructed, and all in one piece. Remember you will have to mow it. Avoid steep banks.

PLANTINGS: Add planting or leave it out; do whichever makes the house look best. Foundation plantings are trite and embarrass the proportions of the house more times than they help. Try instead ground cover, small trees, hedges.

Keep hedges, shrubs, and trees away from the house so that you can wash windows, put on screens, and paint the house without interference from plantings and injury to them. Avoid bushes which grow so large that they mask windows.

FOUNDATION PLANTINGS



When Planted — BUT — 10 Years Later
Plants were chosen without regard to mature size.

PRIVATE AREA

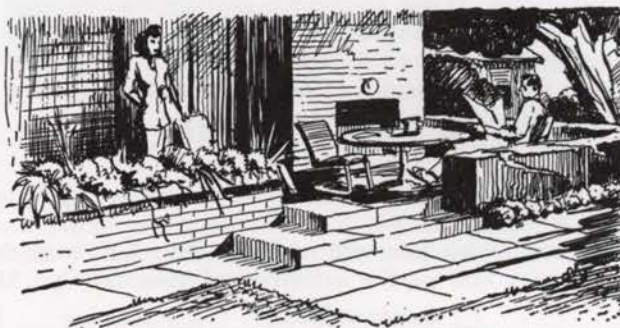
The private area today is the outdoor living space for the family. It is very different from the "back yard" of yesteryear. No longer a catchall, it shows the result of careful planning with regard to activities of the family. An expanse of lawn, a porch or terrace, and play-yard are most commonly included in this area.

PORCH OR TERRACE: The center of outdoor living is a porch or terrace. Provide for one or both. Make sure the floor surface is smooth and flat. Pavement is desirable. Choose good outdoor furniture.

Plan the porch as part of the house. The porch may be screened as protection from insects.

The terrace should adjoin the living area of the house — or be convenient to it if it is a detached terrace. An outdoor fireplace may be a real asset.

The matter of privacy reflects your personal desires. A couple of bushes or a short hedge may be sufficient screening.



LAWN: The lawn in the private area usually doubles as play area and clothes-drying space as well as a place for outdoor living and sun-bathing. Make it shapely, and as generous as the site and the design permit. Part shade is desirable. Suit your tastes.

PLAY-YARD: Children like to run over the whole yard with their toys, but they will be happy if they are provided with a corner where they are permitted to dig and build and keep their stuff. If this spot can be in plain view of kitchen windows, supervision is easier. Play habits are changeable; the plans should be flexible. The lawn at different times may be a croquet, tennis or badminton court; circus or carnival grounds. Set up a portable sand-box with attached shade.

. . . DEVELOP AREAS ACCORDING TO ACTIVITIES



Simple, well-designed private area is made as large as possible for the family's enjoyment. All service activities are concentrated near the kitchen and garage.

GARDEN AREA

Gardens—flower or vegetable—are for homes inhabited by garden enthusiasts.

The garden may be the major feature of your lot, or it may be restricted to one simple plot. It may even be omitted if you want to get rid of work.

Gardens which are unbroken and rectangular with a slight slope are easiest to care for. Provide access for wheelbarrows.

Sun is a requisite for most gardens. Flower gardens should be placed where they can be seen and enjoyed from the indoor and outdoor living areas.

Make all plots simple in shape. Avoid small scattered flower beds. Borders of flowers can be effective.

Rock gardens are very expensive and are difficult to maintain. They look bad when neglected—and they usually are. It is best to forget them.

Pools are a definite hazard to children. If you want a pool, make it shallow. Don't build a pool unless you can drain it.

SERVICE AREA

Your household service or utility area need not be large if it is well-placed and well-planned. This area should be accessible to walks and the driveway so that deliveries can be made to the service door without intrusion into the private area.

At the kitchen doorstep, there should be a garbage can sunk into the ground. If there is a small pavement and a bench or chair near the kitchen, many household tasks can be brought outdoors.

For clothes-drying, a portable "whirligig" can be set up in the private area on washdays. Clotheslines should be in the sun and wind, and at least five feet away from fences or bushes. A small paved area will protect feet and washbasket from wet grass and mud.

Garden service areas are likely to be untidy. Materials and tools for gardening are best stored in the garage along with firewood, screens, storm sash. The garage should be adjacent to the service area and should be specially designed to include built-in storage space for these things.

GUIDEPOSTS OF DESIGN FOR SITE PLANNING

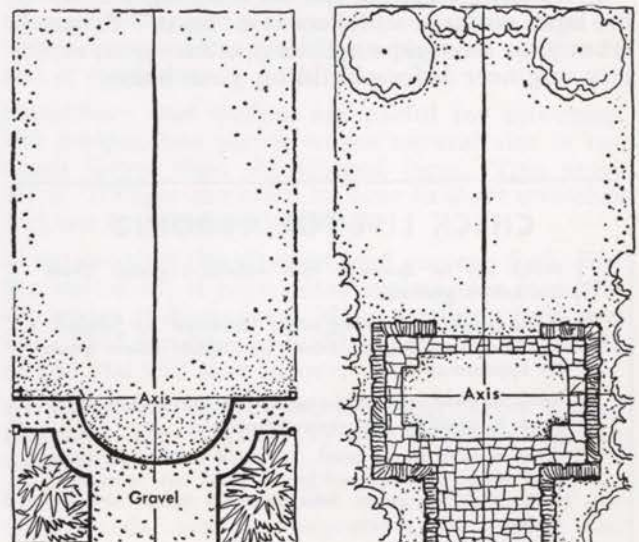
The success of all creative design depends upon certain elements such as scale, arrangement and form, as well as upon the tangible factors discussed above.

Scale is the proper size-relationship between the parts of the design. Outdoor design is most successful when it avoids many small units, clutter and complexity.

Form is the shape of things. It is apparent horizontally in the outline of the lawn and garden areas, or vertically in the silhouettes of bushes, hedges and trees. Use simple shapes for pleasant appearance. Shapeless areas are ugly.

Order is related to arrangement and balance. It influences the degree of formality of the design. Order arises from the repetition and spacing of forms, colors and textures in symmetrical or unsymmetrical arrangement.

Finish is texture and color, as obtained with structural materials (pavement, brick, stone), and the foliage, flowers and fruit of growing things.



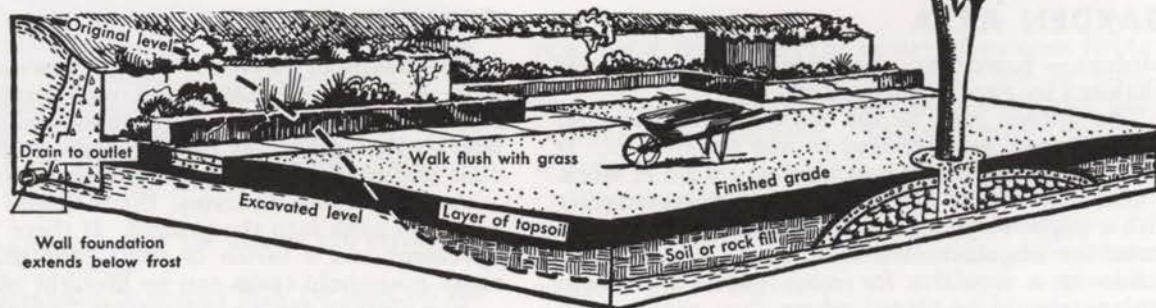
These areas are pleasing in their division of space and use of textures.

. . . GOOD CONSTRUCTION

Landscape construction involves the grading of the land for drainage and appearance; the preservation and proper usage of topsoil, trees and other assets of the site; the layout and construction of driveways, walks and other structures.

These are the fundamentals of landscape construction which apply to every home, large or small. Too often the grading is done primarily for drainage, and landscape principles, such as shaping the land for the best appearance, are forgotten.

If the fundamentals of landscape construction are properly carried out, the home is off to a good start toward successful landscaping.



GRADING AND DRAINAGE

Plan the grading ahead of operations. All grading should conform to the shape of the surrounding land.

To eliminate surface drainage problems, the floor level of the house should be above the natural grade of the land, and the grade should slope away from the house. However, don't forget that a house which hugs the ground is better looking than one which has a "propped-up" appearance. If there is any doubt about which grade to take, take the higher. It is easier to fill up to the grade than to change the natural flow of drainage.

A contour map of your lot showing the lay of the land, drainage and trees is a "must." Secure it from your landscape architect, a surveyor, or the city engineer before building your home.

CHECK LIST FOR GRADING

- ☐ Watch out for drainage from adjoining areas. Check this before grading.
- ☐ Drain driveways by using either "crowned" or "dished" cross sections. Depress driveways slightly below grade for appearance' sake.
- ☐ Have the floor level of the garage an inch or two above grade to avoid ice and snow difficulties.
- ☐ Have terraces almost level. To avoid puddles on lawn, pitch lawns at a rate not less than an inch to each 10 feet. Drain off excess rain water by means of grass gutters or storm drains.
- ☐ Maximum slope for grass banks is about 1 foot vertical to 4 feet horizontal; for gardens, 1 foot in 10.

TOPSOIL

Watch excavating and grading operations and make sure that no topsoil is buried. This soil is valuable. Save it. Scrape off the dark topsoil and pile it to the side of the lot. Spread it back after the rough grading has been completed. Don't waste topsoil on backfilling.

IMPORTANT!

Builders have the right to use only that part of the land needed for building operations. Restrict them from defacing the rest of the lot; fence it off — it will pay. Don't allow your neighbors' land to be invaded either.

Don't let builders bury odds and ends of building materials — lime, building paper, brickbats, mortar. They are not conducive to growing plants.

WALKS

Walks tie together the various areas of the land design. They should be wide, direct and pleasing.

CHECK LIST FOR WALKS

- ☐ Make walks approaching the house at least 3 feet 6 inches wide so that two people can walk abreast.
- ☐ Provide an even smooth slope (at least 1 foot in 100) for drainage. Avoid slopes steeper than 1 foot in 25 to prevent ice hazards. Build walks flush with grade, but locate them on high enough land to avoid standing water.
- ☐ Use materials that give a finely-textured surface, but one that is not too smooth. Walks may be of cement, brick, gravel, or stone. Big flagstones are better than little ones.
- ☐ Use a 4-inch depth of concrete on 4 inches of gravel to make a good concrete walk.
- ☐ Avoid open-joint pavements (walks with grass growing between bricks, stones or cement). They require much care.

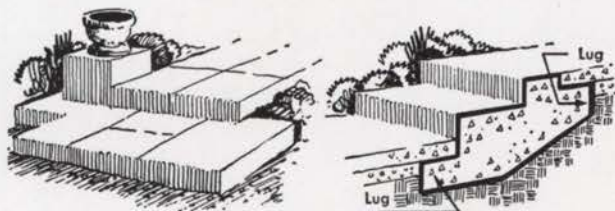
BUILD WELL!

It is long-time economy to build well. Use materials which are weather-resistant. Cheap construction does not pay in the long run.

STEPS

Outdoor steps have charm when they are well-designed. They should be broad, simple, interesting and safe. The isolated, single step is dangerous.

Risers should be low (5 inches) and treads broad (14 inches). Foundations should be below frost. Always pitch steps slightly.



Steps like this are pleasing. Lugs prevent slab from settling.

OTHER STRUCTURES: The construction of walls, fences, arbors, outdoor fireplaces, terraces, and similar outdoor structures not common to every home, cannot be covered in this circular. Consult a landscape architect.

SAFEGUARDING TREES

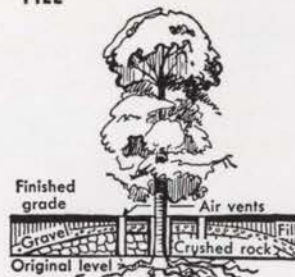
Stand guard over your existing trees during construction. Build rough wood fences or shields around them. Do not let the ground around the roots be trampled nor the treetops mutilated.

Verify the position of trees on your plot plan before you grade to avoid losing valuable trees. If there are too many trees, save those which are desirable and which are in the best positions as related to house and garden.

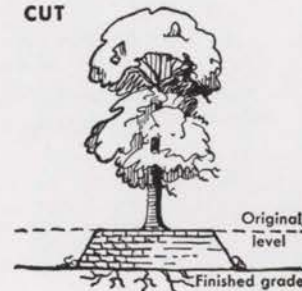
If possible, keep soil under trees at the original level. If you must fill over the roots, use broken stones or gravel—not soil. *If heavy fill or cuts around a tree are necessary, seek expert advice.*

Roots of trees often find their way into drain tiles—also into garden beds thus robbing the cultivated plants. Anticipate this when you plan. When the sewer must pass near tree roots, use cast iron pipe for the sewer line.

FILL



CUT



GET THE EFFECT YOU WANT WITH

. . . WELL-CHOSEN PLANTINGS

Plants are not merely ornamental accessories. They make up the masses in your yard, and consequently the silhouettes which produce the design. **Don't overplant.**

SELECTING: The selection of a particular plant or variety should not be made until you know how large a plant you want. Consider densities as well as heights. Basic considerations for choosing plants are:

1. **Form**—size and shape in relation to lot and house, rate of growth and response to clipping.
2. **Hardiness**—ability to stand winter and summer climatic changes; longevity or permanence.
3. **Soil and moisture conditions.**
4. **Degree of sun or shade** where plant is to be.
5. **Decorative traits**—flowers, fruit and color. (Consider color in relation to the house exterior.)

Choose neat, slow-growing plants which improve with age. . . . Fine varieties are better than common varieties; search for them. . . . Skip the rampant shrubs; they soon become pests. . . . Don't use too many varieties. . . . Spurn shrubbery "freaks" with startling foliage color; dark green is best. . . . Don't plant trees which seed abundantly (tree of heaven, silver maple, elm) unless you want to spend your time destroying seedlings. Do plant, wherever possible, fruit bearing or flowering trees and bushes. . . . Keep in mind, plants which grow native in wooded areas may not grow on city lots; the soil is different.

BUYING: Buy good varieties. Remember, however, plants are never "foolproof." They are alive and individual, and require attention. Young stock will do well if freshly dug and quickly planted (while still dormant) in well-prepared soil.

PLANTING: Failures may result from planting too late in the spring. Try October or November. Investigate local planting seasons.

Trees of standard sizes are usually too big for the average lawn. Choose smaller trees. (See Page 8.) Think twice before putting a big tree within 25 feet of the house.

Shrubby and hedges are useful for screening. For hedges, use plants whose natural size is not much larger than the clipped form. This saves work. Hedges can often be done in short stretches and can be joined to buildings.

Grass requires the cleanest seed you can find. Buy the best seed; it pays. Standard species in northern states is Bluegrass. Make seedbeds deep and fine. Find out how to build a lawn before you do it, and you will save money.

Ground cover can be used for shady places instead of grass. Try English Ivy or a similar evergreen material.

Flowers are for color. For subtle color, omit the strong reds, orange, magenta and yellows, and work with flowers of pastel tints—include occasional dark notes. Look into the time of blossoming so you will have flowers the season round.

HOW TO CHOOSE PLANTS

The homeowner has a choice of thousands of varieties of trees, bushes, vines and perennials from which to select his plants. What he finally chooses, however, should be determined by the basic considerations listed on Page 7 as well as by personal preference.

The sample chart below was developed to aid homeowners in studying plants before making a choice. Use the chart only as a basic pattern for

recording information about plants which you are considering for your site.

Information about plants and planting conditions can be secured from horticultural reference books, a landscape architect or a reliable nurseryman. The federal department of agriculture and state experiment stations also have available many publications on lawns and plants. Get all the advice you can before you start planting.

SAMPLE CHECK LIST FOR PLANTS

Make your own chart using this as a pattern. Choose hardy plants which will grow in your locality. List their characteristics; study them. Select for your site those plants which most nearly meet your design requirements. The plants listed here are northern plant types which will grow in central Illinois and Indiana, and are but a few among thousands available. With proper information, a similar chart can be prepared for any locality.

SYMBOLS

- ✦ Has good fall color (leaves, fruit) ✦ Has showy flowers ? May be attacked by insects or diseases
● Likes shade ★ Clips well ♦ Needs special soil conditions

	APPROX. HT. (in ft.)	SHAPE	GROWTH	EVERGREEN	NOT EVERGREEN	TRAITS	REMARKS
Large Shade Trees	60-75	Broad	Fast		<i>Red Oak</i>	✦	Also many others. Buy small; plant carefully. Fine when old; noble. Brings squirrels. Grand but overpowering over grass or gardens. First to bloom in spring. Likes moist soil. Must have shade in southern area. White bark. Buy small; plant carefully. A little-known, but excellent native tree. Beautiful, but sensitive tree. Others too.
	60-65	Broad			<i>White Oak</i>	✦	
	50-70	Broad			<i>Sugar Maple</i>	✦	
	50-60	Broad			<i>Red Maple</i>	✦	
	45-65	Spread	Slow	<i>Hemlock</i>		✦	
	45-60	Open			<i>White Birch</i>	✦	
	40-50	Round	Slow		<i>Yellowwood</i>	✦	
Small Trees (Including Ornamental, Flowering Ones)	35-50	Dense	Slow		<i>Small-leaf Linden</i>	✦	Small tree or big hedge. Several kinds. Good. A lovely native. Dependable southward. Several magnificent, big-flowering forms. Difficult, but lovely. Needs open, acid soil. Dozens of kinds, sizes and forms. Showy. Little-used, excellent plant; purple berries. A wealth of decorative forms. Most require technical care if you want fruit. Excellent, though difficult to plant. Showy. Mostly spreading. Picturesque, hardy, thorny. Dozens of lovely trees with small sour apples. Neat and elegant. Splendid in fruit.
	25-35	Dense	Slow		<i>Hornbeam</i>	✦	
	25-30	Free	Slow		<i>Flowering Dogwood</i>	✦	
	20-30	Round	Slow		<i>Magnolia (Oriental)</i>	✦	
	20-30	Spread	Poky	<i>American Holly</i>		✦	
	5-45	Many	Fast		<i>Flowering Cherries</i>	✦	
	8-40	Spread	Slow		<i>Shadblow</i>	✦	
	20-35	Many	Fast		<i>Apple, Pear, Cherry</i>	✦	
	18-25	Spread	Slow		<i>Plum, Peach</i>	✦	
	15-35	Spread	Slow		<i>Redbud</i>	✦	
Big Bushes	10-35	Dense	Slow		<i>Hawthorns</i>	✦	Amazing variety of forms; many bluish. Many forms. Get advice. Don't plant in shade. Get acquainted with these aristocrats. Indispensable for hedges. Many, many forms. Indispensable. See fancy varieties. White flowers. Try sweet-scented varieties. For hedges, fillers or background. For bloom August and September. Experimental! Give shade; peat, acid soil. Dozens of profuse bushes; prickly, but lovely. A group of many fine sorts.
	12-20	Bushy	Slow		<i>Crabs</i>	✦	
					<i>Euonymus</i>	✦	
	1-30	Many	Slow	<i>Junipers</i>		✦	
	4-20	Erect	Slow	<i>Arbor Vitae</i>		✦	
	5-20	Broad			<i>Viburnums</i>	✦	
	3-18	Dense	Slow	<i>Japanese Yews</i>		✦	
	10-15	Round	Slow		<i>Lilacs</i>	✦	
	6-12	Bushy	Fast		<i>Mock Orange</i>	✦	
	5-12	Bushy	Fast		<i>Privets</i>	✦	
Little Bushes	8-10	Spread	Slow		<i>Rose of Sharon</i>	✦	Use these; they are tough and obliging. Little plant, but very fancy. Be sure you get the dwarf variety. Select with care; then nurse them. Difficult. Not hardy northward unless protected winters. For tiny, neat edging hedge.
	3-10	Bushy	Slow	<i>Rhododendron</i>		✦	
	2-10	Bushy	Fast		<i>Azaleas</i>	✦	
	2-8	Bushy	Slow		<i>Rose species</i>	✦	
					<i>Cotoneaster</i>	✦	
	2-4	Bushy			<i>Rose—Floribunda</i>	✦	
	2-3	Spread	Slow		<i>Dwarf Cydonia</i>	✦	
	2-3	Bushy			<i>Dwarf Ninebark</i>	✦	
	1-3	Open			<i>Rose—Hybrid Tea</i>	✦	
	1-3	Dense	Slow	<i>Boxwood</i>		✦	
Vines	1-2	Dense	Slow		<i>Box Barberry</i>	✦	Many varieties; get the hardest ones. Several forms. Most may be grown as bushes. Sweet smelling. Hardy southward only. Tender as vine; excellent for ground cover.
	8-12	Unruly	Fast		<i>Rose—Climbing</i>	✦	
	2-18	Dense	Slow	<i>Euonymus Vine</i>		✦	
	2-10	Dense	Fast		<i>Hall's Honeysuckle</i>	✦	
	1-40	Flat	Fast	<i>English Ivy</i>		✦	

